भारतीय मानक
Indian Standard

IS 15883 (Part 6) : 2015

(Reaffirmed 2020)

निर्माण परियोजना प्रबंधन — दिशा-निर्देश

भाग 6 कार्य-क्षेत्र प्रबंधन

Construction Project Management — Guidelines

Part 6 Scope Management

ICS 03.100.30

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भारतीय मानक ब्यूरो
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Construction Management (Including Safety in Construction) Sectional Committee, CED 29

FOREWORD

This Indian Standard (Part 6) was adopted by the Bureau of Indian Standards, after the draft finalized by the Construction Management (Including Safety in Construction) Sectional Committee had been approved by the Civil Engineering Division Council.

A construction project is an endeavour undertaken by a project team on behalf of owner/client to create a built facility suited to the defined functional objectives. From inception to commissioning, the project goes through various distinct stages leading to progressive achievement of project objectives. Each stage involves specific inputs, processes (both technical and managerial) and deliverables. Typically, the life cycle of a project from commencement to completion involves the following stages:

a) *Project appraisal* — Inception, feasibility and strategic planning;
b) *Project development* — Project brief development, planning and design, finalization of proposals, procurement strategy, construction documentation including tender drawings, construction drawings, specifications, cost estimates, bills of quantities, procurement documents;
c) *Planning for construction* — Sequencing of project components, planning tools, resource planning and time cost trade off;
d) *Tender action* — Open competitive bidding/pre-qualification of agencies, issue of tender documents, evaluation of bids, negotiation if required and award of work;
e) *Construction* — Execution, monitoring, control, work acceptance; and
f) *Commissioning and handing over* — Contractual closeout, financial closeout, defect liability commencement, facility handing over.

The distinct features of a construction project include the temporary nature of the project team involved, the evolutionary process of project deliverables during project development stages and the unique output as the built facility. As a result of these features, unless there is efficient and effective project management, a construction project is faced with challenges of uncertainties leading to time over-runs, cost over-runs, changes in project parameters, loss of quality and inability to meet the functional objectives. While technical soundness of a proposal is an important aspect of a construction project, the management aspects, which involve techno-legal, financial and other issues, have also a significant role in the success of a project. Therefore, management functions and technical processes in a construction project need to be integrated towards achieving project objectives. Top management commitment plays an important role in harmoniously achieving these project objectives. In some of the public domain projects, it may be necessary to share relevant information with public at large through appropriate means.

To provide necessary guidance on effective construction project management, a series of standards are being developed as part of IS 15883 'Guidelines for construction project management'. Part 1 General, of the standard since published as IS 15883 (Part 1) : 2009, covers general aspects of overall construction project management. This has been followed by publication of other parts as follows:

Part 2 : 2013 on Time management
Part 3 : 2015 on Cost management
Part 4 : 2015 on Quality management
Part 5 : 2013 on Health and safety management
Part 8 : 2015 on Risk management

The other parts of the standard are under formulation which will cover functions such as procurement management, communication management, human resource management, sustainability management and integration management.

(*Continued on third cover*)

Indian Standard

CONSTRUCTION PROJECT MANAGEMENT – GUIDELINES

PART 6 SCOPE MANAGEMENT

1 SCOPE

1.1 This standard (Part 6) covers guidelines for scope management aspects of construction project management.

1.2 The scope management aspects regarding project formulation and appraisal up to the stage of preparation of preliminary proposals for financial approval are not covered in this standard. The scope of this standard, therefore, covers the stages subsequent to the stage of approval (when a decision to implement the project including its financing is taken) till commissioning and handing over of the project.

1.3 The provisions of this standard are to be read in conjunction with IS 15883 (Part 1).

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
7337 : 2010	Glossary of terms in project management (*second revision*)
10400 : 2013	Glossary of terms in inventory management (*second revision*)
15198 : 2014	Glossary of terms in human resource development (*first revision*)
15883	Construction project management – Guidelines
(Part 1) : 2009	General
(Part 2) : 2013	Time management

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 7337, IS 10400 and IS 15198 shall apply.

4 GENERAL

The project scope can be defined as the quantum of work that needs to be completed to deliver a product, service or a result with specified features and functions. It is the boundary of a project within which all activities in the projects are required to be executed. The scope along with time, cost and quality form the four major considerations of any project.

Since the scope forms the basis of a project defining boundaries of work, any ambiguity in scope leads to confusion and unnecessary work. To avoid this, the scope needs to be clearly defined, controlled and managed throughout the life cycle of the project.

In project scope, the work quantum often includes provision for contingencies which could accommodate a permissible amount of variation that may arise during project execution. However, when the variation occurs beyond the permitted threshold, it would trigger a scope change which needs to be managed through scope management process.

4.1 Need for Scope Management

Scope of a project is derived from the deliverable description and assumptions defined in the project charter prepared during the formulation and appraisal stage. Scope management is the key process to maintain quantum and extent of a project. It is needed to control the influence of any change in the associated activities of a project during its life-cycle. If scope is not managed, it would lead to uncontrolled scope variation which is to be prevented. A variation introduced without appropriate contractual binding with the stakeholders and implementation of the same without assessing/concluding the impact on baseline time/cost in the intermediate stage of project execution may derail the project success and cause cost/time overrun and associated contractual disputes.

Scope management is essential to evaluate and manage the expectations of the key stakeholders of the project. The project scope may sometimes contain elements of implied requirements which may be interpreted differently by various stakeholders. Diligent documentation and peer review of the same can minimize omissions, mistakes and errors. However, the project team shall anticipate variance in perception of the implied requirements among the stakeholders which may result in dispute during the execution stage. Hence, there is a critical need for the process of scope management for controlling any changes in scope to facilitate the smooth execution of a project.

4.1.1 *Scope Variation*

In a project, there is a likelihood of scope variation which refers to addition of new features, deletion of original features and/or adoption of items of works, specifications at variance with those originally contemplated. While some of these changes cannot be altogether avoided, efforts should be made to keep these to the minimum. They have to be incorporated after a defined process of impact analysis scrutinized and approved by an empowered authority. Scope variation can originate from several sources and are to be controlled through the process of scope management.

4.1.2 *Causes of Scope Variation*

Some of the common causes of scope variation include,

a) inadequate data in the initial stage for preparing a well detailed project scope statement in the project initiation document;

b) changes in requirements earlier specified by project stakeholders; and

c) unanticipated external factors influencing the project requirements and assumptions.

These should be taken care of to prevent avoidable scope change.

4.2 Benefit of Scope Management

Following are some of the benefit of adopting a formal scope management process in a project:

a) Larger support in planning and controlling the project;
b) All stakeholders arrive at a common understanding about what is to be done in the project and what is not to be done;
c) Plays a vital role in listing out the expected deliverables;
d) Avoids uncontrolled scope variation and hence associated time/cost over-runs, contractual disputes, etc.

It is important to finalize and document the project scope baseline before entering to project construction stage to eliminate contractual disputes and to avoid wastage of time and cost. It is also important to manage assumptions and constraints of the project.

4.3 Organizational Structure for Scope Management

A specific team can be organized to carry out scope management work during different stages of a project. The team may be part of the project planning team reporting to the project manager. It may include the members involved in developing the project-charter in line with management objectives and key project selection criteria during appraisal stage.

During scope planning and detailing stage, the team will have the responsibility to,

a) identify and communicate with the key stakeholders and to compile their requirements; and
b) define the scope and create document and preliminary break down structure of functions and activities of the project.

During construction stage, the team will manage and control the variations in project requirements/stakeholder expectations. As part of scope monitoring and control, any change request will have to go through a defined change-control-process to analyze the necessity and assess the cost/time impact of the change, evaluate other alternatives, if any.

During commissioning and handing over stage of the project, the team will verify the scope of the deliverable with respect to the scope baseline.

4.4 Methods and Processes for Scope Management

The scope management process include the following steps:

a) Scope planning;
b) Scope detailing;
c) Scope monitoring and change control; and
d) Scope verification.

5 SCOPE MANAGEMENT IN RELATION TO PROJECT STAGES

5.1 General

The scope management processes are to be carried out in all the stages of the project. Flow chart of scope management process is indicated in Table 1. While provisions relating to project formulation and appraisal stages are not covered in this standard, it is to note that during that stage, the scope identification needs to be done.

5.2 Scope Management During Pre-construction Stage

During the pre-construction stage of the project, the first two steps of scope management process namely scope planning and scope detailing shall be carried out. The project-charter prepared from the project appraisal team forms an important input for these steps. The steps start with stakeholder identification, collecting

Table 1 Tabulation of Scope Management Process
(*Clause* 5.1)

Sl No.	Project phases	Scope Management Process	Requirements	Outputs
(1)	(2)	(3)	(4)	(5)
i)	Pre-construction phase:	a) Scope planning	1) Project charter / brief 2) Constraints and assumptions 3) Deliverables 4) Project features and functions 5) Stakeholder requirements	i) Performance specification ii) Scope statement iii) Scope management plan
		b) Scope detailing	1) Methodology 2) Constraints and assumptions 3) Scope statement 4) Project estimates and construction	i) WBS ii) Technical specifications iii) Tender/concept drawings iv) Tender document (request for proposal) and bill of quantities
ii)	Construction phase	Scope monitoring and control	1) Scope baseline 2) Progress reports 3) As-built information 4) Change requests	i) Deliverables validation ii) Scope changes iii) Corrective actions iv) Corrected time and cost baseline v) Revised drawings and BOQ
iii)	Completion and handover	Scope verification	1) Validated deliverables 2) Project documentations 3) Joint inspection report 4) T&C reports	i) Formal acceptance ii) Project completion certificate

requirements, preparation of preliminary estimate, proposed construction methodology, creating a work break down structure (WBS), etc. Depending on the procurement/tendering strategy, the scope shall be defined by preparing technical specifications, drawings and bill of quantities as part of request for proposal document. The scope may also be defined only by providing detailed performance specifications along with conceptual drawings for the bidders to detail and finalize.

5.3 Scope Management During Construction Stage

During construction stage of the project the scope management process mainly involves control and monitoring of the scope. The monitoring and controlling shall be carried out in the intervals of weekly, fortnightly, monthly, etc, decided suitably as per project requirement. Since there is a possibility of variation in assumptions and project constraints anticipated during appraisal and pre-construction stage, it may be necessary to introduce changes by choice or due to circumstances. These changes are required to be controlled. So, during this stage of the project, the scope management mainly revolves around change control and their implementation.

5.4 Scope Management During Commissioning and Handing Over Stage

Before the handing over process can commence, the completed deliverables of the project will have to be verified and accepted against the updated scope baseline which is called scope verification. In case of as-built variations, new change-request, impact analysis and approval documentation shall be carried out to contractually close the same.

6 SCOPE MANAGEMENT

6.1 Scope Planning and Detailing

6.1.1 *Scope Planning*

The scope planning process starts immediately after appraisal stage of the project. During the appraisal stage, formal authorization is accorded to proceed with the project. The output from appraisal stage is a document called project charter or project brief which lists out the project objectives, feasibility reports, assumptions and expected constraints under which the project is authorized for implementation.

The scope planning process shall include identifying and documenting the requirements from all relevant stakeholders of the project which may be functional or technical in nature. The compilation of the same shall be carried out through various techniques like interviews, facilitated workshops, questionnaires surveys, erecting prototypes, etc. This stage shall also involve detailed analysis of the product or the major project deliverables, alternative identification through value engineering, etc. The performance specifications of the product, broad level technical specifications and concepts shall be finalized in this stage.

Scope planning process shall lead to the development of written scope statement and defined measurable parameters like number of beds in a hospital, number of seats in IT buildings, built up areas and number of car parks in a car parking, etc. It also describes the various buildings, structures to be constructed, its functionalities and services, expected time schedule and milestones, etc, which shall form the basis of all future project decisions. This will help in confirming or developing common understanding of project scope among the stakeholders. As the project progresses, the scope statement may need to be revised or refined to reflect changes to the scope of the project.

In this stage, a detailed scope management plan shall be drawn to lay down all necessary practices including technical and organizational interfaces pertaining to project scope.

6.1.2 *Scope Detailing*

The project scope statement from scope planning forms the input for scope detailing. The scope detailing involves subdividing the major project into deliverables and further into more manageable components in order to,

a) improve accuracy of cost, time and resource estimates;
b) define a baseline for deliverables measurement and control during construction stage;
c) form organizational structure in line with project objectives; and
d) facilitate clear roles and responsibility assignment.

For scope detailing, the project is broken down and defined as various manageable components in terms of physical structure with details of specifications and functionalities. This breaking-down and detailing process shall be guided by the procurement and execution strategy of the project, such that the major elements are defined in the way the project is intended to be executed and captures the milestones forming the deliverable completions. The scope detailing process involves following major steps:

1) Identifying the major elements of the project;
2) Deciding, if adequate and workable cost and time can be developed at this level of detail for each element;
3) Identifying consistent elements of the deliverable having tangible/verifiable results for performance measurement; and
4) Verifying the correctness of the sub-division – in line with organizational breakdown structure, deliverable integration methodologies and product features and functions.

The work break down structure remains the output of decomposition in scope detailing process. Refer **6.1.3** of IS 15883 (Part 2) for various considerations in development of WBS of a project.

All factors likely to affect the scope leading to effect on time, cost, quality, health and safety, etc, shall be considered.

Detailed bill of quantity, pre-construction drawings, detailed technical specifications, methodology, safety requirements, etc for the project shall be the final output of scope detailing. Depending on procurement strategy, the same may be issued as tender documents after validated for clarity in the contractual interpretations to invite bids for construction stage of the project.

Proper scope detailing is critical to the project success. When the scope detailing is inadequate, the probability of occurrence of cost over-run, time over-run and contractual disputes are most likely. It may lead to uncontrolled changes which can disrupt the project work flow, decrease morale and productivity of the work force.

6.2 Scope Monitoring and Change Control

6.2.1 *General*

Scope monitoring shall be a continuous process during the design and construction stage of the project. During this stage, as the execution of work proceeds, the deliverables shall be continuously validated through regular inspections. Any normal variation within the permissible contingency, originally anticipated, shall be dealt with based on the relevant provisions. However, the scope of the project may require to be changed beyond the permissible threshold. This may be due to the assumptions and constraints anticipated during appraisal and pre-construction stage of project, getting materialized differently due to factors like,

a) change in business needs as perceived during project formulation and appraisal stage;
b) error or omission in project or deliverables definition;
c) technology improvement;
d) new legislation and regulation;
e) change in material availability; and
f) value engineering, design modification initiated during construction stage by specialist/experts who come on board only at this stage.

In the event of such a requirement, a change in the project scope shall be introduced through a controlled process.

6.2.2 *Change Control Process*

Change control process is a way to manage the changes that may have to be introduced to the project scope during the life of a project. The change request can be initiated by any stakeholder of the project. However, the project manager, with concurrence of sponsor, shall be the sole approver of a change and unless approved by him, no change shall be introduced in a project scope. The project manager shall engage the domain specialist groups from within or outside the project team to analyze the necessity, cost implications and time impact of the change requested. The specialist group may seek information from other stakeholders of the project for evaluating the change request. Their analysis along with the recommendation for approval or rejection, actions that may require baseline revision, etc, shall be placed for appropriate decision to the project manager. The analysis shall also be based on the latest progress reports of the project providing information on scope performance such as which interim products have been completed and which have not. On approval of a change by the project manager, the project documents have to be suitably updated and baseline scope shall be suitably recast (*see* Fig. 1). Change control process is essential for successful project execution as it is closely interfaced with other processes of scope control, schedule/ time control, cost control.

6.2.3 *Change Request*

Change request may occur in many forms such as, oral or written, direct or indirect, externally or internally initiated, and legally mandated or optional. However, it shall be formalized into an action to initiate the change control process. In general a change request may be formalized by a project team member or a stakeholder upon considering the variance from the project objectives and/or constraints. Formalized change request would include descriptions of the change, components affected, business need, cost/time estimates, risk assessment, resource requirements and approval status. The templates used for such change request shall be developed depending on the specific needs of a project. Annex A and Annex B provide typical specimens of some of the change request forms. During design development, the specimen scope control sheet enclosed in Annex C may be used. The specimen change order register given in Annex D may be used for recording all the changes formally introduced through change control process. The roles and responsibilities in various stages of change control process is given in Table 2.

6.2.4 *Deliverable Validation and Variance Analysis*

The deliverable validation is a continuous quality control process which is carried out based on the technical specification set out in the defined scope of the project. The periodic inspection report prepared during the construction stage of the project along with documents prepared from as-built-survey shall be used for variance analysis. In variance analysis, any deviation in the project scope with respect to the baseline shall be identified. As part of scope control, the reasons for variance shall be identified and decision taken regarding need for corrective action. Through these steps in a project, any change in the feature, functionality and product description shall be controlled and monitored on regular basis.

6.2.5 *Periodicity for Scope Monitoring*

Apart from instances of change request, scope monitoring shall be done at pre-determined periodical intervals.

6.3 Scope Verification

6.3.1 *General*

Scope verification is the process of formalizing acceptance of the completed project deliverables by the project stakeholders (sponsors, client, customer, etc) verification may be for entire project deliverables or for a part thereof. Verification shall be carried out only on validated deliverables, for example, those that have passed the quality control and quality assurance procedure of the project. In this process through an inspection which may be an audit, review or walk-through, the validated deliverables of the project shall be accepted or rejected by comparing them with the project requirements and acceptance criteria. If they are rejected they may be reworked upon by the project team. As stakeholders inspect project deliverables, they may also find defects or areas that have been overlooked. The inspection team may then record the problems associated with the deliverables as a snag

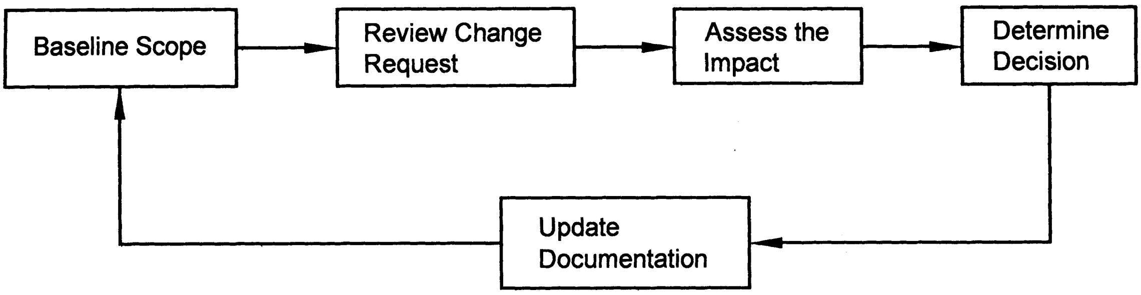

FIG. 1 OVERALL PROCESS FLOW OF CHANGE CONTROL

TABLE 2 Change Control Process Roles and Responsibilities

(*Clause* 6.2.3)

Sl No. (1)	Steps (2)	Responsibility (3)	Details (4)
i)	Change request identification	Any project stakeholder, project team member or project sponsor	Identify the need for a change and describe it on the project change request form
ii)	Change request assessment	Project manager and Domain specialist group	1) Immediately defer or reject change request if it is not a valid one 2) For those change requests that are not deferred or rejected determine appropriate resources required to analyse the change request 3) Perform a quick assessment of the potential impact, including an estimate of the costs and time scale for performing a detailed impact analysis 4) Update the change request form
iii)	Change request analysis	a) Project manager	Distribute the change request for analysis to specialist group members
		b) Domain specialist group	1) Analyse impact of change, including effort estimate and financial impact, within agreed time frame 2) Accept for detailed analysis or recommend for deferment or rejection
		c) Project manager	1) Collect, consolidate and document the analysis to evaluate the total impact 2) Update the change request form to document the decision
iv)	Change request approval	Project manager/ Project sponsor	The changes with the impact matrix are scrutinized. The recommendation of the domain specialist group is considered before the final decision of acceptance or rejection of the change
v)	Change request implementation	Project manager and project team	i) Update project management plans and procedures ii) Communicate changes to the team iii) Monitor progress according to updated project management plans iv) Record completion of change request v) Close change request

that is to be attended. Sometimes, the as-built variation may be accepted by formalizing the deviation through a change request process.

6.4 Post Construction Review and Documentation

Post construction review shall be done analyzing the instances of scope changes and their impact, and shall be documented and preserved for later reference. The documentation during closing out stage shall include all the scope variances, the reasoning behind the corrective action chosen and other types of lessons learned from scope control. This should become part of the historical database for the project and other projects of the performing organization.

ANNEX A

(*Clause* 6.2.3)

CHANGE REQUEST FORM – SPECIMEN 1

Project name:		**Project number:**
Project manager:		**Change register entry:**
Sponsor:		**Date:**
Change request quick summary		
Proposed Change to: scope, schedule, cost, risk or complexity level, quality, contract administration, customer satisfaction, project management plans or procedures	***Qualitative Impact on Project:*** Low, Medium, High	***Status:*** Open, Approved for analysis, Approved for implementation, Implemented, Deferred, Rejected, Closed
Quick summary on change request focus area		
Design Changes in project design - Yes/No	***Procurement*** Changes in procurement / purchase (Material) - Yes/No	***Construction*** Changes in construction methodologies - Yes/No

Change request identification	
Short description	A brief summary of the proposed change
Requestor estimate of priority	The priority of the change request (critical, high, medium, low) Critical - Request is very urgent requiring immediate analysis. All project work halts High - Request is urgent requiring analysis before most project work can continue Medium - Request requires analysis before significant work towards the next project deliverable is completed Low - Request is not urgent but needs to be analyzed before the next project deliverable is complete
Raised by and date	The name of the originator of the request
Further analysis?	☐ Approved ☐ Rejected ☐ Deferred Name: —————————————————— (the person making this decision)
Change request assessment	
Detailed description	A detailed description of the proposed change including justification and/or benefits
Time scale for analysis	Time period for performing the analysis
Accepted for analysis by and Date	The name of person who accepted for analysis
Impact analysis	
Impact analysis	A specification of all project elements to be modified as a result of the change
Scope impact description	A description of the scope of the change and any impacts to overall project scope
Schedule impact description	A description of the schedule for the change and any impacts to overall project schedule
Cost impact description	A description of the costs for the change
Impact of not implementing	A description of the impact to the overall project of not implementing the change
Alternatives	Identify alternatives
Completion criteria for change request	A description of the completion criteria for the change
Estimated effort	An estimate of the effort to implement the change
Estimated cost	An estimate of the total cost of the change
Impact level	a) High - Major modification having a repercussion on the entire project b) Medium - Average modification having limited repercussions on the project c) Low - An elementary modification having little potential impact on the project team and none outside it Factors to be considered in determining the impact level include: 1. Impact on the initially planned main features of the solution (scope), 2. Impact on the cost of the project, and 3. Impact on the project end date or a major milestone
Analyzed priority of request	The priority of the change request (critical, high, medium, low): Critical Change - Request is very urgent requiring immediate implementation High Change - Request is urgent requiring implementation before most project work can continue Medium Change - Request requires implementation before significant work towards the next project deliverable is completed Low Change - Request is not urgent but needs to be implemented before the next project deliverable is complete
Resources	The number of resources required for the change
Estimates validated by and Date	The name of the person who validated the impact estimates
Analyzed by	The name of the person performing the impact analysis
Final conclusion	
Decision	a) Approved for implementation b) Deferred c) Rejected
Validation for decision	A description of the reason for the decision
Approved resources	The amount of the approved resources, if change is implemented
Approved cost	The amount of the approved cost, if change is implemented
Comments	Any additional comments
Change request decision signatures	
Project Manager:	*Sponsor/Owner/Key Stakeholder:*

ANNEX B

(*Clause* 6.2.3)

CHANGE REQUEST FORM – SPECIMEN 2

Project No.	**Date:**	**Distribution:**	
Client:			
Project:			
Subject (define of change):			What?
Identified by:			Who?
Reasons for change:			Why?
Discretionary		Non-discretionary	
Cost implication:			
Time implication:			
Recommended action:	Project manager	Date	
Client decision required by:	Date:		
Forwarded to client:	Date:		
Client’s decision:	Date:		
Projected schedule and cost plan (budget) amended on	Project Manager		

ANNEX C

(*Clause* 6.2.3)

TYPICAL DESIGN DEVELOPMENT SCOPE CONTROL SHEET

Client name:
Project name:
Sheet No.

Design team report
Design brief section:

Issue:

Pages:

Options considered:

1.
2.
3.

Recommendation:
Cost plan item:
Ref:
Current cost:
Effect of recommendation on costs/schedules: Increase/decrease

Application for transfer of client contingency: Yes/No	Amount:
Architect/civil engineer/services engineer/ structural engineer:	Date:
Quantity surveyor:	Date:
Design team leader:	Date:

Client approval
Design development/Client contingency transfer approved (delete as applicable)

Position	Signature	Date

ANNEX D

(*Clause* 6.2.3)

CHANGE ORDER REGISTER

Project:					**Job Id:**		
Client:					**File Reference:**		
Request ID	Date	Initiated by	Description of Change	Stakeholder/ Sponsor Decision Required by	Stakeholder / Sponsor Decision Obtained by	Stakeholder/ Sponsor Decision	Stakeholder/ Sponsor Decision Id No.

ANNEX E

(*Foreword*)

COMMITTEE COMPOSITION

Construction Management (Including Safety in Construction) Sectional Committee, CED 29

Organization	*Representative(s)*
In personal capacity (*103, Charak Sadan, Vikaspuri, New Delhi*)	SHRI P. KRISHNAN (***Chairman***)
Aecom India Private Limited, Noida	REPRESENTATIVE
Airports Authority of India, New Delhi	SHRI PRADEEP KUMAR SHRI S. SREEKUMAR (*Alternate*)
Builders' Association of India, Mumbai	SHRI H. S. PASRICHA SHRI SANJAY SONI (*Alternate*)
Building Materials and Technology Promotion Council, New Delhi	DR SHAILESH KUMAR AGRAWAL SHRI PANKAJ GUPTA (*Alternate*)
Central Building Research Institute (CSIR), Roorkee	DR ACHAL K. MITTAL SHRI AJAY CHAURASIA (*Alternate*)
Central Public Works Department, New Delhi	SHRI B. B. DHAR SHRI SANJEEV RASTOGI (*Alternate*)
Construction Industry Development Council, New Delhi	SHRI P. R. SWARUP SHRI RAVI JAIN (*Alternate*)
Creative Design Consultants and Engineers (P) Ltd, Ghaziabad	SHRI AMAN DEE
Delhi Development Authority, New Delhi	SHRI ASHOK KHURANA CHIEF ENGINEER (HQ) (*Alternate*)
Delhi Metro Railway Corporation, New Delhi	SHRI DALJEET SINGH
Delhi Tourism and Transportation Development Corporation, New Delhi	SHRI JOSE KURIAN SHRI VIVEK BANSAL (*Alternate*)
EH and S Cares, New Delhi	SHRI A. K. TRIPATHI
Engineers India Limited, New Delhi	SHRI R. K. DAS SHRI M. D. DESHPANDE (*Alternate*)
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Indian Buildings Congress, New Delhi	SHRI A. K. SRIVASTAVA SHRI P. S. CHADHA (*Alternate*)
Indian Institute of Technology, New Delhi	PROF B. BHATTACHARJEE DR K. N. JHA (*Alternate*)
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Ministry of Statistics and Programme Implementation, New Delhi	DR DEVENDRA VERMA SHRI R. RAJESH (*Alternate*)
National Buildings Construction Corporation Limited, New Delhi	SHRI RAJENDRA CHAUDHARI SHRI H. K. DHAWAN (*Alternate*)
National Highways Authority of India, New Delhi	SHRI R. K. GANDHI SHRI R. N. CHOWDHARY (*Alternate*)
National Institute of Construction Management and Research, Mumbai	DR ANIL AGARWAL
Nirman Vikas Anusandhan Sansthan, Raipur	SHRI SANJEEV KASLIWAL SHRI AMARJEET SINGH (*Alternate*)

Organization	*Representative(s)*
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PHD Chamber of Commerce and Industry, New Delhi	Dr Ranjeet Mehta
Planning Commission, New Delhi	Shri S. S. Ganapathy
PMI Organization Centre Pvt Ltd, Mumbai	Shrimati Leena Gupte Samant Shri Tejas Sura (*Alternate*)
RITES Ltd, Gurgaon	Shri Pawan Choudhary Shri M. D. Joshi (*Alternate*)
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(*Continued from second cover*)

Scope management of the projects is necessary to ensure avoiding delays, disputes, and other complexities. The foremost requirement is to clearly define the scope and boundaries of the project based on well thought out decisions in consonance with the exact requirements of the owner so that substantial changes in the scope at later stages are obviated. It should be done at the stage of approval by the Competent Authority and should dwell on the main objective of the project and its outer boundary beyond which the work cannot go, cover aspects relating to method of project cost estimation and escalation mechanism (for a long duration project) which can help in assessing the revised cost. While defining scope, relevant factors like objectives of the project, technology adoption, process engineering (in case of complex projects), procurement method (for example requiring competitive bidding and in special cases selective bidding), should also be stated. The deviation/increase in the scope of work as a result of owner's requirements or emergencies, have to be distinguished from other normal deviations.

This standard (Part 6) on scope management has been formulated with the aim to provide guidelines for completing the project within the defined scope. This standard is intended to cover aspects on scope management as part of construction project management including information regarding the applicable tools and techniques. It gives guidelines on scope planning, scope detailing, scope monitoring and control, and scope verification as part of the scope management process. Users of this standard are encouraged to employ suitable construction management software as an aid to implement provisions of this standard.

The guidelines may be applicable in general to all construction projects. However, for smaller projects, the applicability of various provisions may be decided appropriately by the parties concerned.

The composition of the Committee responsible for formulation of this standard is given in Annex E.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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